BEFORE THE

PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of American Transmission Company to Construct a New 138 kV Line from the North Madison Substation to the Huiskamp Substation in the Towns of Vienna and Westport and the Village of Waunakee in Dane County, WI	137-CE-139

FINAL DECISION

Introduction

On February 20, 2006, American Transmission Company LLC and ATC Management Inc. (ATC) filed an application for its North Madison-Huiskamp 138 kilovolt (kV) transmission line project (Waunakee project). ATC proposes to construct about 8.5 miles of new 138 kV transmission line from its North Madison Substation in the town of Vienna to the existing Huiskamp Substation in the town of Westport, all in Dane County.

The Certificate of Public Convenience and Necessity (CPCN) application is GRANTED subject to conditions.

On July 28, 2006, the Commission determined ATC's application was complete pursuant to Wis. Stat. § 196.491(3)(a)2. Wisconsin Statute § 196.491(3)(g) requires that the Commission take final action within 180 days after it finds a CPCN application complete unless the Commission receives an extension from Dane County Circuit Court. On October 9, 2006, Dane County Circuit Judge Stuart Schwartz granted the Commission a 180-day extension. The Commission must take final action on or before July 23, 2007.

On February 22, 2007, Dane County and the city of Madison petitioned the Commission to halt review of ATC's application and to order a study by an independent entity into the

electric needs of Dane County and the potential to meet those needs through a combination of conventional transmission line construction, energy efficiency/dispersed generation alternatives, and unspecified new technologies. Parties including the Sierra Club – Four Lakes Chapter (Sierra Club), Citizens for Responsible Energy (CRE), and individual citizen intervenors supported this petition. ATC and the affected distribution utilities countered that the need for the proposed project was urgent and dictated by need in the local Waunakee area. They argued that need for the Waunakee project was not affected by transmission projects or plans elsewhere in the county. The commission denied the petition by Dane County and the city of Madison for an independent study of the transmission needs for Dane County, docket 137-EI-101, at its open meeting of March 22, 2007.

Technical sessions of the hearing were held on January 29, 30, and February 2, 2007. Public sessions of the hearing were held on Saturday afternoon February 3, in Madison, and Monday evening, February 5, 2007, in Waunakee. Due to the extreme cold on February 5, an additional public hearing session was held in Waunakee on the evening of February 15, 2007. At the technical sessions, expert witnesses offered testimony and exhibits on behalf of ATC, Wisconsin Power and Light Company (WP&L), Madison Gas and Electric Company (MGE), Wisconsin Public Power Inc. (WPPI), Sierra Club, CRE, Commission staff, and the Wisconsin Department of Natural Resources (DNR). In addition, testimony was offered by other parties to the hearing: the village of Waunakee, Steven Books, the CaPaul family, and Lisa Fuelleman. The parties that appeared before the Commission are named in Appendix A of this Final Decision. In addition, at the public sessions the Commission received both oral and written testimony from members of the public. Electronically filed comments were also received as

testimony. Persons who appeared and testified are listed in the hearing record and all written testimony submitted by the public was entered into the record as exhibits.

The Commission conducted its hearings as Class 1 contested case proceedings, pursuant to Wis. Stat. §§ 196.491(3)(b) and 227.44. Each commissioner deciding this matter read the record of proceedings. After receiving briefs on February 21 and March 2, 2007, the Commission deliberated on this matter at its July 12, 2007, open meeting and rendered an oral decision. Commissioner Azar recused herself from the discussion and decision of this docket.

Findings of Fact

1. ATC is a public utility engaged in rendering electric transmission service in Wisconsin, pursuant to Wis. Stat. §§ 196.01(5)(a) and 196.485.

2. The facilities approved by this Final Decision are necessary to provide adequate and reliable service to present and future electric customers.

3. The facilities approved by this Final Decision will adequately address the present needs of ATC's electric system and are necessary to satisfy the reasonable needs of the public for an adequate supply of electrical energy.

4. The facility designs, locations, and routes approved by this Final Decision are in the public interest considering alternative sources of supply, alternative locations or routes, individual hardships, engineering, economic, safety, reliability, and environmental factors.

5. The approved transmission line routes use existing utility and other rights-of-way (ROW) to the extent practicable, and the routing and design of the facilities approved by this Final Decision minimize environmental impacts in a manner that is consistent with achieving reasonable electric rates.

6. The facilities approved by this Final Decision will not have undue adverse impacts on environmental values such as, but not limited to, ecological balance, public health and welfare, historic sites, geological formations, aesthetics of land and water, and recreational use.

7. Construction and operation of the facilities at the estimated cost will not impair the efficiency of ATC's service, will not provide facilities unreasonably in excess of probable future requirements and, when placed in operation, will not add to the cost of service without proportionately increasing the value or available quantity thereof.

8. The facilities approved by this Final Decision will not unreasonably interfere with the orderly land use and development plans for the area.

9. The facilities approved by this Final Decision will not have a material adverse impact on competition in the relevant wholesale electric service market.

10. Energy conservation, renewable resources, or other energy priorities listed in Wis. Stat. §§ 1.12 and 196.025 are not cost-effective, technically feasible, or environmentally sound alternatives to the proposed facilities.

11. The approved transmission line routes utilize priority siting corridors listed in Wis. Stat. § 1.12(6) to the greatest extent feasible, consistent with economic and engineering considerations, reliability of the electric system, and protection of the environment.

Conclusions of Law

The Commission has jurisdiction under Wis. Stat. §§ 1.11, 1.12, 44.40, 196.02, 196.025, 196.395, and 196.491 and Wis. Admin. Code chs. PSC 4 and 111 to issue a CPCN authorizing

ATC to construct and place in operation the proposed electric transmission facilities in Dane County, subject to the conditions stated in this Final Decision.

Opinion

Introduction

The record for this case is extensive and thorough. Over 100 witnesses testified, and there are 39 parties. The Commission granted funds for intervenor compensation to the Sierra Club and CRE, which provided expert witnesses. The hearing transcript has more than 1,500 pages and there are approximately 130 exhibits.

The record includes thoughtful, interesting, and often compelling testimony from both individuals and expert witnesses about potential changes in energy policies at county, state, and regional levels, and about needed changes in the habits of individuals. Even assuming that efficiency and conservation efforts will increase in the future, such changes take time. State government is beginning to implement many of the policies that witnesses promoted. Two Commission proceedings in particular address energy policy issues: the current Strategic Energy Assessment (SEA) (docket 5-ES-103), and the prospective development of statewide conservation goals mandated by 2005 Wisconsin Act 141 (Wis. Admin. Code ch. PSC 137).

The Commission has a responsibility to ensure that electric service to Wisconsin citizens is adequate and reliable—now, and going forward. ATC's proposed transmission line addresses the need to support electrical transmission in the Waunakee area, which presents a significant reliability problem that cannot be alleviated by laudable, but as yet unfulfilled, efficiency and conservation efforts.

Project Need

The distribution utilities serving the area of Waunakee and northwestern Madison (Waunakee area) include the Waunakee Water and Light Commission, MGE, WP&L, and Wisconsin Electric Power Company (WEPCO). ATC provides transmission service to these utilities. Distribution lines in the Waunakee area are presently served by a 69 kV network.

Under current forecasts of energy use, supplied and presented by the distribution utilities and used by ATC in its analysis, the current 69 kV system cannot meet summer peak loads under single-contingency conditions[1] in the very near future, possibly as early as 2007. The system will overload during normal operating conditions by 2011. The likelihood of overloading components of the transmission system will increase with growth in electricity demand.

The expert presented by Sierra Club found a need for this project, but testified that construction could be delayed by a year or two, based on a variation in load growth assumptions.

Commission staff provided an independent analysis of need. A staff economist assayed electric load growth in the Waunakee area through economic growth indicators and reviewed the distribution utilities' forecasts. A staff engineer verified ATC's load flow model inputs, ran load flow models to confirm reported outcomes, and developed two load flow model scenerios to determine the sensitivity of outcomes for a lower WP&L load growth forecast and a change in construction timing and design for a projected future upgrade of the existing Blount-Ruskin

[1] A transmission system should operate safely if a transmission line or equipment suddenly goes out-of-service (trip). In a single-contingency analysis, the tripping of single key elements of a transmission system is modeled, and the outage effects are determined on the existing transmission system. Under NERC standards, the bus voltages should remain within 10 percent of their nominal ratings and the transmission line loadings within their emergency ratings under the single-contingency outage.

69 kV line. These independent analyses confirmed that in order to maintain reliable service, the Waunakee area needs a new transmission line.

Sierra Club challenged the sufficiency of the record on the issue of need, and argued that construction likely could be delayed a year or more due to decreasing loads and new Demand-side Management (DSM) measures that are expected to be implemented by the public and governmental units. Ms. Fuelleman argued that need was not satisfactorily demonstrated and that society needs to evaluate alternatives within a larger picture of the true costs of electricity. The CaPaul family argued that evaluations of need should be made by considering the build-out plan for the Wisconsin power grid as a whole, a more comprehensive view of the current infrastructure, and future projects. CRE argued that need for the proposed line could likely be significantly delayed or eliminated because of the following factors: the impacts of climate change and corresponding changes in public policy and energy use; adjustments to current electric utility organization under Wisconsin laws; rising energy costs; a greater emphasis on DSM; and generally uncertain conditions.

The distribution utilities argued that there is abundant evidence in the record documenting the need for transmission improvements beginning as early as the summer of 2007 and that the only genuinely contested issue was the reliability of the peak load forecasts that ATC used. According to the distribution utilities, even if there is uncertainty about the timing of need, the Commission should err on the side of project approval because the consequences of failing to act are severe.

ATC presented comprehensive need and planning studies in support of its proposal. All of the utilities' engineering experts, as well as Sierra Club's expert, testified that there was need

for the line at least within one or two years of ATC's estimated date. There was also ample evidence regarding increased residential and commercial development in the Waunakee area, and related increases in the demand for energy. The distribution utilities' actual demand was shown to exceed their forecasted demand in a number of recent instances. Testimony by Commission staff listed reasons for variations in distribution substation loads that could cause loads to occur that are higher than those forecasted.

The record shows, based on power flow modeling, that a single contingency outage on the transmission system in the Waunakee area could cause overloads as soon as this summer. Without appropriate corrective action, this could lead to violation of North American Electric Reliability Council (NERC) reliability standards and could lead to financial penalties for ATC. The record further shows that, between this summer and 2015, as many as 16 other single-contingency conditions could cause overloads in the Waunakee area. The likelihood of overloading components of the transmission system will increase as growth in electricity use increases. Under any of the forecasts presented, a system voltage collapse could occur for normal operating conditions in four to seven years. On that basis, the Commission finds the need for this proposed line to be serious and urgent. Considering the above evidence, the Commission finds the record sufficient to establish the need for the Waunakee project.

Energy Priorities Law

The Energy Priorities Law creates the following priorities:

> **1.12 State energy policy. (4)** PRIORITIES. In meeting energy demands, the policy of the state is that, to the extent cost-effective and technically feasible, options be considered based on the following priorities, in the order listed:
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> (a) Energy conservation and efficiency.
> (b) Noncombustible renewable energy resources.
> (c) Combustible renewable energy resources.
> (d) Nonrenewable combustible energy resources, in the order listed:

1. Natural gas.
2. Oil or coal with a sulphur content of less than 1%.
3. All other carbon-based fuels.

In addition, Wis. Stat. § 196.025(1) declares, "To the extent cost-effective, technically feasible and environmentally sound, the commission shall implement the priorities under s. 1.12(4) in making all energy-related decisions . . . ." The Commission implements the energy priorities by determining whether any higher-priority alternatives to a CPCN project would be cost-effective, technically feasible, and environmentally sound.

ATC provided data showing historic and forecasted loads at the distribution substations in the Waunakee area, and the estimated amounts by which load would need to be reduced at critical substations in order to avoid overload, low voltage, or service interruptions. The distribution utilities provided testimony that their respective load forecasts already included consideration of DSM programs and plans. ATC also analyzed an alternative to the proposed line that used a composite conductor on existing transmission lines in northern Dane County.

The Sierra Club provided a witness who calculated potential DSM savings for Dane County. He also provided general information about distributed generation and cogeneration.

Commission staff conducted an independent analysis of the feasibility of alleviating reliability problems in the Waunakee area through additional DSM and distributed generation. Commission staff also investigated the effect on area problems of using a composite conductor and changing the timing and design of a planned Blount-Ruskin 69 kV upgrade.

Commission staff analyzed the number, duration, and pattern of past peak periods. A staff specialist in DSM reviewed historic DSM levels and programs, and whether the appropriate amount of DSM was included by the distribution utilities in their forecasts. This specialist calculated whether additional DSM programs could generate sufficient, additional energy and

demand reductions in the Waunakee area to delay the need for a new transmission line. In addition, a staff engineer calculated the costs, logistics, and environmental impacts of using either mobile diesel generators or dispersed customer-owned generation to postpone need for a new transmission line.

ATC and the distribution utilities argued that alternatives to the proposed project were not cost-effective, technically feasible or sound for the following reasons: sufficient DSM, above that included in their forecasts, could not be in place in time to maintain reliability of service to the Waunakee area; that no one was proposing renewable generation in the Waunakee area; that use of a composite conductor would increase system losses; and that neither the design nor timing of the Blount-Ruskin line upgrade would affect the need for the proposed line.

Sierra Club challenged the sufficiency of the record on the issue of compliance with the energy priorities law, arguing that a combination of new technology, an upgrade of the Blount-Ruskin transmission line, distributed generation, and DSM could meet the Waunakee area needs. The Sierra Club further argued that the public interest favors maximizing energy efficiency and conservation rather than building additional transmission lines; and that alternatives to building new transmission lines are precluded by the current transmission planning process. According to Sierra Club, in the absence of reforms in Wisconsin's energy planning process, the Commission is authorized to protect the public interest by conditioning a CPCN to ensure that the public interest is protected.

CRE argued that time-of-day rates, DSM, and distributed generation could offset the need for a new transmission line. The CaPaul family argued the need for a more global and comprehensive review of the best methods to meet future demand. Mr. Books argued that

competing technologies, services, and infrastructure could provide the necessary energy if not for barriers related to the laws governing Commission approval and eminent domain.

Load levels at which accepted standards of reliability of service to the Waunakee area would be jeopardized are imminent. The distribution utilities have already included a realistic and possibly optimistic amount of DSM in their forecasts. Unrealized distributed generation and cogeneration projects cannot offset the need for an additional transmission source to the Waunakee area within the timeframe needed. The temporary use of mobile diesel generators would be costly and environmentally damaging.

The record does not show that energy conservation, renewable resources, and/or distributed generation are feasible, cost-effective, or environmentally benign alternatives. It is not possible for one or more of these measures to be implemented in the Waunakee area at a rate and magnitude necessary to avoid an unacceptable degradation of service reliability. These alternatives would not solve the specific reliability concerns identified in the transmission studies. They would not provide support to the transmission system sufficient to meet NERC reliability standards. They could not be implemented in a timely manner and would likely require significant legal, program, and budget changes by governmental units as well as utilities. Sierra Club did not offer any cost-effective, technically feasible alternatives that would meet the reliability concerns addressed by this project. While several other intervenors offered well-founded, generic policy comments, these theoretical alternatives cannot replace a real world examination of reliability needs and solutions for the Waunakee area.

Electric System Alternatives

ATC conducted load flow studies using power flow models to analyze eight possible transmission line solutions to the problems identified in the Waunakee area. Based on system performance and costs, ATC chose to apply for the North Madison-Huiskamp 138 kV transmission line project. The studied alternatives included no construction, as well as a new North Madison-Huiskamp 138 kV line, a new North Madison-Waunakee 138 kV line, conversion of the North Madison-Dane-Waunakee 69 kV line to 138 kV, a new Yahara River-Waunakee 69 kV line, a new Sycamore-Ruskin 69 kV line, a new North Madison-Sycamore 138 kV line, and a composite conductor package. Only four of these alternatives would solve the immediate problems identified in the Waunakee area. Of these four, the 69 kV to 138 kV conversion and the composite conductor package did not provide long-term support to the Waunakee area, yet would cost more to construct than the remaining two alternatives, the North Madison-Huiskamp 138 kV alternative, and the North Madison-Waunakee 138 kV alternative. These last two alternatives would provide both immediate and long-term solutions to the identified problems. The North Madison-Waunakee 138 kV alternative, however, would require a new substation site near the village of Waunakee with its accompanying environmental effects and would cost more than the North Madison-Huiskamp alternative.

A new North Madison-Huiskamp 138kV transmission line would serve to provide a strong 138 kV source of supply to the Waunakee area, and it would eliminate the reliability problems identified in ATC's load flow studies.

Potential Impacts on Wholesale Competition

Wisconsin Statute § 196.941(3)(d)7. requires the Commission to find that a "proposed facility will not have a material adverse impact on competition in the relevant wholesale electric service market" before it can approve any CPCN application. ATC provided testimony that the proposed facility would not have a material adverse impact on wholesale competition. A Commission staff economist also testified that the proposed transmission line, as part of a robust, well-functioning transmission system, would not have an adverse impact on competition in the relevant wholesale electric service market. CRE provided a witness that disagreed with the testimony of the Commission staff witness. The CRE witness testified that the Commission staff witness erred in defining the relevant wholesale market. The CRE witness testified that the relevant wholesale market needed mandatory real-time price signals to trigger real time demand-side responses to real time prices.

The addition of transmission capacity in a well functioning transmission system will improve the opportunity for competition in the relevant wholesale electric service market. The project meets the requirements of Wis. Stat. § 196.941(3)(d)7.

Public Health and Welfare

Under Wis. Stat. § 196.491(3)(d)4, the Commission in reviewing a CPCN transmission line application must consider whether the proposed line will have an undue adverse impact on public health and welfare. Considering the public need for greater transmission capacity in the Waunakee area, together with the other elements of ATC's North Madison-Huiskamp project, including the conditions imposed by this Final Decision, the Commission finds that issuing a CPCN will not have an undue adverse impact on public health and welfare and is in the public

interest. The project as approved will maintain reliable service in the rapidly growing areas of Waunakee and northern Madison. Any associated negative effects of this project on the human environment will not be significant.

Many of the homeowners along the routes are concerned about the effects of electric and magnetic fields (EMF) on their families' health. EMF is created by the flow of electric current through a conductor and are present everywhere electricity is used—in houses, cars and the workplace, as well as under transmission lines. EMF decreases with distance from the source. As part of its application, ATC provided design diagrams of proposed transmission lines and structures for specific segments of the proposed routes. The filings also included calculations of anticipated EMF levels for 2008, and for the year 2018. Generally, the magnetic fields from transmission lines return to that of background levels at or near the edge of the ROW. Further, ATC uses structure designs that tend to minimize the creation of EMF. Decades of scientific research have not shown that exposure to EMF presents any serious health hazards to humans.

Permits and Approvals

ATC will need permits from DNR and the Wisconsin Department of Transportation (DOT) to construct the proposed transmission line. DNR permits will include: (1) a permit for placement of a clear span bridge over navigable waterways under Wis. Stat. ch. 30; and (2) a construction site erosion control permit under Wis. Admin. Code ch. NR 216. DOT will require a permit for any transmission line structures on and/or wires overhanging or crossing State Highway (STH) 113. Both DNR and DOT have testified that there should be no major obstacle to ATC obtaining these permits.

ATC will also need permits from Dane County, and the towns of Vienna and Westport, for the placement of structures on and/or wires overhanging county/town road ROW; placing distribution lines underground on town and county road ROW; constructing lines across roads; and construction that requires disruption of traffic.

Wisconsin Environmental Policy Act (WEPA)

Under Wis. Stat. § 1.11, the Commission must consider the environmental impact of a proposed action such as a CPCN application to construct a high-voltage transmission line. Under the Commission's rules implementing the above statutory provision, the Commission must prepare an environmental assessment (EA) that provides a "factual investigation of the relevant areas of environmental concern in sufficient depth to permit a reasonable informed preliminary judgment of the environmental consequences of the proposed action." Wis. Admin. Code § PSC 4.20(1). An EA must include a recommendation as to whether a proposed action is a major action significantly affecting the quality of the human environment as to require an environmental impact statement (EIS). Wis. Admin. Code § PSC 4.20(1).

The Commission notified landowners along the proposed transmission line routes and other potentially interested members of the public, by letters dated August 10 and September 18, 2006, that an EA would be prepared for the Waunakee project application. Based on the draft EA prepared by Commission staff, on November 24, 2006, the Commission's WEPA coordinator issued a preliminary determination that no significant environmental impacts on the human environment were likely to occur with the project, and that preparation of an EIS was not required. Following a 15-day comment period on this finding of no significant impact, the EA was finalized and signed on December 15, 2006.

Routing Process

ATC's routing process complied with Wis. Stat. §§ 1.12(6) and 196.025(1m). ATC adequately documented a process that included: extensive coordination, both pre-application and post-application, with Commission staff, DNR, and DOT; a public review phase that included public information meetings in June, September, October, and December 2005; and detailed environmental studies. All existing linear corridors were investigated as potential routes, and the routes presented in the application follow existing corridors for a majority of their length. Appendix B shows the final routes that the Commission reviewed.

Routes

The Western Route is comprised of Segments 2a, 2b, 3, 43a, 45, 8b, 13, 24, 27, 31, 34, and 36 (see Appendix B). The Western Route starts at the North Madison Substation and proceeds west to Patton Road, follows Patton Road south to Cuba Valley Road, follows Cuba Valley Road west to Schumacher Road, and follows Schumacher Road south to STH 19. At STH 19, the route follows Raemisch Road through the village of Waunakee business park to Foundation Circle, turns west and continues about 450 feet on the north side of Foundation Circle. The route then turns south and follows a railroad spur to where it connects with an existing 69 kV transmission line on the southwest side of the Wisconsin Southern railroad tracks.

The Eastern Route is comprised of Segments 1, 56, 47, 49, 58, 9, 14, 26, 32, 61, 35, and 36 (see Appendix B). The Eastern Route heads east from the North Madison Substation to WIBU Road. It follows WIBU Road south to County Trunk Highway (CTH) I, and follows CTH I south to Easy Street. At Easy Street, the Eastern Route turns west for a short distance before continuing south along CTH I. The Eastern Route crosses the intersection of CTH I,

STH 113, and STH 19, continues south along STH 113 to River Road, turns west along River Road, crossing STH 113, and continuing west to join the existing 69 kV transmission line just west of the railroad tracks.

Both routes are similar with respect to environmental impacts, community impacts, engineering, and cost considerations of a transmission line. Both of the routes follow existing roadway corridors and existing distribution lines. Because of this, both are consistent with the policy directives of Wis. Stat. § 1.12(6) for the siting of transmission lines.

Both routes require about an additional 45 feet of ROW for construction. Both routes are compatible with current local land use, zoning, and development plans. Both routes have agriculture as the primary land use and have some rural residences not associated with agricultural operations. The Western Route is located through the Waunakee Business Park on the east side of Waunakee, while the Eastern Route passes a cement plant operation. Both routes are located near residential development in the village of Waunakee and the town of Westport. The Western Route is about 8.7 miles long, while the Eastern Route is about 8.6 miles long.

Along both routes, most of the native habitat has been destroyed or significantly altered by farming, development, and road ROW maintenance. There are some woodlots and wetlands along both routes, although those along the Western Route are higher in quality. A representative from DNR testified that both the Eastern and Western Routes are permitable under Wis. Stat. § 30.025, although more wetlands would be crossed by the Western Route and this route would also require more temporary clear span bridges. The Western Route crosses the 100-year floodplain of an unnamed tributary to Sixmile Creek in the Waunakee Business Park. It also crosses the 100-year floodplain of Sixmile Creek in two areas. Construction should not

have any significant impact on the floodplains. The Western Route would require an archeological survey of a small area prior to construction and would require both habitat and species surveys along Sixmile Creek prior to construction.

The effect on aesthetics would be greater along the Western Route than the Eastern Route for several reasons. The Western Route follows narrower town roads, its visual setting is more rural, a portion of the route does not have electric distribution lines located along it, and there is a rural vista on Cuba Valley Road that would be significantly affected by transmission structures. The Eastern Route is also in a rural setting, but the roads it follows have a wider ROW and more traffic than the town roads on the Western Route. This would reduce aesthetic effects as well as any effect on property values. STH 113 is a major state highway and commuter route in and out of Madison that probably will be expanded to four lanes in the future. There are similar numbers of residences within 300 feet of either route. There are no churches, hospitals or daycare centers within 300 feet of either route. Village Administrator Kim Wilde testified that the village of Waunakee would prefer the Eastern Route.

In reviewing the routes, the Commission must evaluate the features of each proposed route under the statutory standards for issuance of a CPCN. In particular, under Wis. Stat. § 196.491(3)(d)3. and 4., the Commission must consider whether "the proposed facility will have undue adverse impact on other environmental values such as, but not limited to, ecological balance, public health and welfare, historic sites, geological formations, the aesthetics of land and water and recreational use . . . ."

The Commission notes that the record primarily concerns potential effects on property values and human health. Few natural or recreational resources are affected.

After more than two decades of research to determine the health effects of magnetic fields associated with transmission lines, some epidemiological studies have shown a weak association between EMF and human disease. Laboratory studies on cells and animals have not demonstrated any relationship or indicated any mechanism by which exposure to magnetic fields could trigger disease. The Commission will continue to monitor research, and to require utilities to provide data on existing and estimated fields, and to design low-EMF structures.

There is no consensus on the impact of electric transmission line on property values. Studies have found the effects to vary from no reduction in property value to a possible reduction of up to 23 percent. Studies have generally found that any effect on residential property values diminishes with distance from the transmission line, and a 2002 study found no significant change in property value 500 feet from the proposed line. Any diminution of property value that might occur would diminish over time as the areas adjacent to the transmission line become more mature.

Most agricultural impacts would be temporary. ATC has minimized potential effects by choosing routes that follow existing road ROW. This not only greatly reduces concerns about potential interference with cropping patterns, but reduces any potential effects from soil compaction and erosion during construction and access to the structure sites because access would not be across farmland. Farming on the ROW easement would be allowed.

The Eastern Route would overlap ROW with CTH I and STH 113 for most of its length. The STH 113 ROW is wide enough to accommodate expansion to four lanes. A planning process for expansion of STH 113 from CTH M to STH 19 (Segments 26, 32, and 61) is

currently underway. The Western Route would follow narrower town roads and urban streets for much of its proposed length.

The two routes present minor differences in engineering, but the project can be constructed on either route. The Eastern Route costs less, although the two route costs are similar.

Carefully considering the many factors required by Wis. Stat. § 196.491(3)(d), the Commission concludes that the Eastern Route is the most appropriate location for the proposed transmission line. The Eastern Route follows a major state highway and has a wider ROW than the Western Route, which follows narrower, more rural town roads. Further, a transmission line will have less effect on the aesthetics along the Eastern Route than it would along the more rural Western route.

Mitigating Potential Impacts

Aesthetics

Public testimony favored placing the proposed transmission line underground near residential developments, near residences, and through farmland. The village of Waunakee passed a resolution requesting that any transmission line within the village or within one mile of the village be placed underground. However, the Eastern Route is located along county roads and a state highway in primarily rural and industrial areas. Few residences are located close to the route. In rural areas, the environmental impact to soils and vegetation of placing a transmission line underground generally exceeds any aesthetic benefit. The cost of placing the Waunakee project line underground along STH 113 is estimated at about $3.06 million per half-mile or about $5.18 million per mile, as compared to about $488,000 per half mile or

$976,000 per mile for overhead construction. Another concern with underground transmission lines is that, once the line is in place, any necessary repairs may take more time than for an overhead line, causing lengthy out-of-service periods. All of these concerns, in the context of this project, advise against placing the 138 kV transmission line underground.

Effects on the scenic view should be mitigated by placing underground the existing single-phase distribution line that now runs overhead along the approved route. Placement of structures outside the direct line of view of residents, and the strategic planting of screening shrubbery near homes would further reduce visual effects.

The removal and trimming of desirable yard trees also creates an aesthetic impact. ATC should design placement of transmission line structures along the approved route so as to reduce this impact as much as possible. In two specific locations on the approved route along STH 113, there were landowner concerns about the effects of removing yard trees and testimony was entered by the affected landowners, ATC, and a Commission staff environmental expert. In one of these locations there was extensive testimony by one landowner, Gordon Meffert, including a statement that his neighbor across STH 113 (Pulvermacher) would not oppose having the line located on his property. However, there was no substantiation of his neighbor's testimony in the record. The environmental effects of locating the line on Mr. Meffert's side of the highway where commercial/industrial development is expected would be less than locating the transmission line across the highway where it would result in the removal of important yard trees that currently screen a residence from STH 113.

Agricultural land

The majority of land crossed by the approved route is agricultural land. If possible, construction will take place during the winter months in order to reduce impacts to the soil.

Archeological/historical artifacts

The approved route passes the Norway Matsen Cemetery, a small burial ground on CTH I in the town of Vienna. Per recommendations by the Wisconsin Historical Society (WHS), ATC can avoid the cemetery site by placing poles on the opposite side of the road.

When distribution lines are to be buried in an area that has listed archeological resources, ATC should provide the appropriate electric distribution utility with all known archeological information and a copy of this information should be submitted to the Commission.

There are many known archeological sites in the project area, several of which are near the approved route. The potential for discovering new archeological sites is high. If archeological resources are identified at any point during construction, construction in that place must stop immediately and WHS and the Commission must be consulted. After consultation, the WHS' direction regarding these resources must be followed.

Trees

Many of the trees that would have to be removed or pruned for construction and maintenance of the transmission line are oak trees, and the pruning or removal of oak trees could contribute to the spread of oak wilt. To minimize any risk, ATC must avoid pruning or removing oak trees from April 15 to July 1, when the fungus that causes oak wilt most commonly reproduces and the beetles that spread the fungal spores are active.

Water resources

By careful placement of structures, ATC can avoid wetlands along the approved route. DNR will provide guidance for any water crossings necessitated by construction.

Rare Species

No impact to threatened or endangered species is expected on the approved route.

Cost

The estimated cost of constructing the proposed project on the approved routes is $15.28 million as shown below. The cost estimate includes related substation improvements.

	Project Cost			
Description	**Construction Labor**	**Materials**	**Other (incl. Real Estate, Engineering)**	**Subtotal**
North Madison-Huiskamp Pre-Certification	NA	NA	$1,475,340	$ 1,475,340
North Madison-Huiskamp New 138 kV Line	$2,977,000	$1,956,000	$3,457,234	$ 8,390,234
Y132 Waunakee-Huiskamp Double-Circuit	$ 35,684	$2,661	$ 31,599	$ 69,944
North Madison Substation 138 kV Breaker Addition	$ 215,695	$ 188,752	$ 205,702	$ 610,149
Huiskamp Substation 138/69 kV Transformer, Bus and Breakers	$ 790,589	$2,812,130	$ 842,650	$ 4,445,369
13877 North Madison-Sycamore Relocation	$ 64,189	$ 30,245	$ 92,591	$ 187,025
Y116 North Madison-Deforest Crossing	$ 27,382	$ 2,610	$ 27,264	$ 57,256
Two Additional Road Crossings	---	---	---	$ 50,000
Total				**$15,285,317**

Induced Voltage Study

There are existing distribution lines along most of the approved route. ATC could incorporate them into the transmission structure design or place them underground. The disposition of the distribution lines along the approved route will depend on the outcome of an ATC study of induced voltage, now in progress. ATC expects to complete its study in 2007.

As a condition of its approval, the Commission will require ATC to report the conclusions of the study, including recommendations for incorporating the results into final design of the approved transmission line, and to obtain further Commission approval prior to beginning construction of the line.

Certificate

The Commission grants ATC a CPCN for construction of the Waunakee project. Under this certificate, ATC may construct a new 138 kV transmission line that connects the North Madison Substation with the Huiskamp Substation and any related improvements described in the original application. The approved transmission corridor is designated as the Eastern Route. The estimated cost of the project, including the cost of any related improvements is estimated to be about $15,285,000.

Order

1. The facilities authorized to be constructed are those described in ATC's CPCN application and subject to the conditions specified in this Final Decision.

2. The approved Waunakee project transmission line route consists of Segments 1, 56, 47, 49, 58, 9, 14, 26, 32, 61, 35, and 36.

3. ATC shall place existing single-circuit distribution lines underground on the approved route.

4. The approved routes shall not constrain ATC as to placement relative to the side of a road, where the route follows a road, except in the following locations:

a. ATC shall locate the transmission line on the west side of STH 113 north of the CaPaul property to increase the distance from the residence of James and Nancy CaPaul and to reduce the number of trees removed on their property, and then move the line back to the east side of STH 113 about 1,000 to 2,000 feet south of the CaPaul property.

b. ATC shall locate the transmission line on the west side of STH 113 north of the Pulvermacher residence to increase the distance from the Pulvermacher residence and then move the line back to the east side of STH 113 south of the pole shed that is on the Pulvermacher property.

c. ATC shall locate the transmission line on the west side of the road as it passes the Stouffer property along CTH I, remove the existing three-phase distribution line from the east side of the road and underbuild it on the new transmission poles; and work with the landowners to further minimize their concerns through transmission design and location—for example, by placing all three conductors on the side of the pole facing away from the Stouffer property.

d. ATC shall locate the transmission line on the opposite side of the road when passing the Norway Matsen Cemetery along CTH I.

5. ATC shall work with landowners to minimize impacts of line placement and construction.

6. ATC shall avoid pruning or removing any oak trees from April 15 to July 1.

7. ATC shall implement all of the techniques to mitigate impacts to farmland referenced in the project application.

8. ATC shall report the results of its Induced Voltage Study and obtain further Commission approval before beginning construction of the authorized transmission line.

9. ATC shall submit to the Commission the date that it commences construction and the date that the facilities are placed in service. ATC shall submit quarterly progress reports to the Commission indicating the project's major construction and environmental milestones, the extent of the physical completion to date, and the expenditures to date by line item. In addition, once each year ATC's quarterly progress report shall include a revised total cost estimate for the project.

10. This authorization is for the specific project as described in this Final Decision and at the stated cost. Should the scope, design, or location of the project change significantly, or if the cost of the project increases by more than 10 percent, ATC shall promptly notify the Commission.

11. Upon completion of the project, ATC shall notify the Commission and report the actual costs segregated by plant account and comparable to the cost breakdown of the application. For any account or category where actual cost deviates significantly from those authorized, the final cost report shall itemize and explain the reasons for the deviation.

12. After construction, ATC shall identify the location of each transmission structure using global positioning system technology and transfer this data to a geographic information systems database, using software compatible with state government standards, and shall submit this information to the Commission.

13. This CPCN is valid only if construction commences no later than one year after the date this Final Decision is mailed.

14. Jurisdiction is retained.

15. This Final Decision is effective the date of mailing.

Dated at Madison, Wisconsin, July 20, 2007

By the Commission:

Sandra J. Paske

Sandra J. Paske
Secretary to the Commission

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See attached Notice of Appeal Rights

Notice of Appeal Rights

Notice is hereby given that a person aggrieved by the foregoing decision has the right to file a petition for judicial review as provided in Wis. Stat. § 227.53. The petition must be filed within 30 days after the date of mailing of this decision. That date is shown on the first page. If there is no date on the first page, the date of mailing is shown immediately above the signature line. The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

Notice is further given that, if the foregoing decision is an order following a proceeding which is a contested case as defined in Wis. Stat. § 227.01(3), a person aggrieved by the order has the further right to file one petition for rehearing as provided in Wis. Stat. § 227.49. The petition must be filed within 20 days of the date of mailing of this decision.

If this decision is an order after rehearing, a person aggrieved who wishes to appeal must seek judicial review rather than rehearing. A second petition for rehearing is not an option.

This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

Revised 9/28/98

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APPENDIX A
(CONTESTED)

In order to comply with Wis. Stat. § 227.47, the following parties who appeared before the agency are considered parties for purposes of review under Wis. Stat. § 227.53.

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Docket 137-CE-139

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Docket 137-CE-139

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APPENDIX B

North Madison to Huisikamp
Proposed Transmission Line Routes
PSC Docket 137-CE-139